iPR-8 proximity reader
User manual

Function

iPR-8 proximity reader is intended to be applied in different access control systems, using RS232, Wiegand 26, Wiegand 37, Wiegand 42 or TouchMemory interface.

Types of identificators

Integrated Technical Vision ltd manufactures readers operating with amplitude modulation (ASK) proximity cards and tags.

Design

The reader is placed in miniature hermetic plastic case. Thanks to the small overall dimensions the reader is distinguished for its advanced reliability.

Specifications

Warm-up time	10 seconds after power start
Case	
Material	ABS plastic
Dimensions	154 x 45 x 22 mm
Weight	94 gramm
Ambient Conditions	
Temperature	-35 . . . +60 ^{0}C
Humidity	100% (without condensate)
Power supply	
Voltage	+9. . . +16 V of direct current
Current	up to 50 mA
Maximal current	up to 80 mA
Voltage ripple	up to 500 mV.

Distance of reading

Typical reading distance is 105-200 mm and depends on tag type used with it. This parameter is valid for power supply voltage range from +9 to +16 VDC and ripple up to 150 mV_{p-p}.

Wiring

Reader has 8-wire colored cable intended for connection to access control panel.
Table 1. The wires assignment:

	W2 / W3 / W4 / WS	RS232	TouchMemory	DC-B053
Color	Function			
Green	Data 0	Rx	iButton	"B"
White	Data 1	Tx	–	"C"
Red	+V	+V	+V	"A"
Black	GND	GND	GND	"D"
Brown	Red Led	–	Red Led	
Orange	Green Led	–	Green Led	
Blue	Beep	–	Beep	
Yellow	Hold	Hold	Hold	

Multiwire signal cable with 0.22 mm^2 wires' cross-sectional is recommended to connect the reader and control panel. Using this cable the maximum length of 150 meters can be obtained.

Type of interfaces

The proximity reader is intended to be applied in different access control systems, using RS232, Wiegand 26, Wiegand 37, Wiegand 42 or TouchMemory interface.

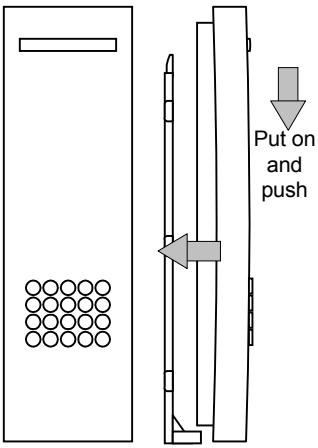
Mounting

It is recommended to mount the reader on a wall closely to a door at appropriate height.

❗ Do not mount the reader on metal surfaces, since it causes decreasing of reading distance.

❗ If more than one reader is used in the system, place them not closer than 50 cm one from another, otherwise a reading distance will be decreased. To avoide decrease of reading distance connect yellow-colored wires of readers.

To mount the reader preceed as follows:
- Remove the boot in the bottom part of the reader
- Loosen the screw
- Push mounting panel towards the screw and remove it from the reader
- Using the mounting panel as a template mark and then drill two openings 6mm in diameter and 35mm deep
- Pass the wire through central opening
- Secure the mounting plate on a wall using plastic nailing plugs and screws
- Connect the reader to the control panel's cable
- Put on the reader on the mounting plate, push the case down against stop and secure the reader with the screw
- Put on the boot



The Reader Operation

Reading of identificator code

The code reading is annunciated by built-in buzzer and two-color LED according to interface type and annunciation mode (refer to «Data transfer and Annunciation»). Repeated reading will be available after 0.8 sec if the identificator is moved away from the reader sensing area.

Hold Mode

Reader is turned to the hold mode while yellow wire is closed to the ground. In this mode reader does not read cards, thus current consumption decreases to 25mA.

Do not apply voltage to hold outlet!

Data transfer and Annunciation

The reader is provided with two-color LED and built-in buzzer. LED and buzzer function according to interface type programmed and annunciation mode.

Wiegand or TouchMemory Interface

Engaging of LED and buzzer is possible automatically or by closing of corresponding wire to the black wire (GND) according to Table 2.

Table 2. Annunciation mode:

x	Buzzer	Red LED	Gren LED
00	Beep on card read	Normally ON, switched OFF at reading	Blinks at reading
01	Outside control	Normally ON, switched OFF at reading	Blinks at reading
02	Beep on card read	Выключен	Blinks at reading
03	Outside control	Выключен	Blinks at reading
04	Beep on card read	Normally ON, switched OFF at reading	Outside control
05	Outside control	Normally ON, switched OFF at reading	Outside control
06	Beep on card read	Outside control	Outside control
07	Outside control	Outside control	Outside control
08	Beep on card read Availability to switch ON from outside	Normally ON, switched OFF at reading Availability to switch OFF from outside	Blinks at reading Availability to switch ON from outside

Data transmissions from reader comply with the standard specified. Protocol for TouchMemory interface from family 01 (to satisfy the requirements DS1990).

RS232 interface

To control annunciation send three-byte control packet to the reader. Packets should be transmitted with 2 400 bits per second, 8 bit data, no parity, 1 stop bit.

Packet format:

Bit	7	6	5	4	3	2	1	0
byte 0	0	1	0	0	1	0	0	1
byte 1	–	–	red blinks	–	red uninterruptedly	–	–	–
byte 2	green stedy	–	green blinks	–	–	buzzer pulsatory	–	buzzer uninterruptedly

1 – corresponds to LED or buzzer switching on. LED blinking and buzzer pulsatory control bits have the highest priority.

Annunciation does not change until next control packet is received.

Reader transmits data as follows:

byte #	0	1...10	11	12
Destination	23h	data	Csum	0Dh

data:

bit	7	6	5	4	3	2	1	0
Destination	0	0	1	1	X	X	X	X

Checksum: exclusive OR of low nibbles of bytes from 1 to 10, high nibble of always must be 3h.

Example: Card code 7E000460AA will be sent as:
23h, 37h, 3Eh, 30h, 30h, 30h, 34h, 36h, 30h, 3Ah, 3Ah, 3Bh, 0Dh.

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